THESIS

THE COLLABORATIVE FOREST LANDSCAPE RESTORATION PROGRAM: LESSONS FROM TWO COLORADO-BASED FOREST RESTORATION PROJECTS

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ABSTRACT

UNDERSTANDING COLLABORATIVE IMPLEMENTATION UNDER THE COLLABORATIVE FOREST LANDSCAPE RESTORATION PROGRAM

The U.S. Forest Service's Collaborative Forest Landscape Restoration Program (CFLRP) emphasizes collaboration throughout the planning, monitoring, and implementation of landscape-scale forest restoration projects. The requirement for stakeholder participation in implementation is a policy innovation that is part of the agency's broader shift towards collaborative governance approaches. The purpose of this study was to investigate how CFLRP stakeholders and Forest Service personnel are collaborating during the implementation process, the extent to which they are satisfied with their involvement, and the factors that influence the ability of stakeholders to participate in this process. The study used a comparative case study approach to investigate the two CFLRP projects in Colorado. We conducted interviews with 27 collaborative group participants and Forest Service personnel, in addition to participant observation of collaborative meetings and field site visits. Interviewees described five major categories of factors that impacted their ability to participate in the implementation of the CFLRP projects: agency-wide structural factors, factors related to individual agency personnel, collaborative group characteristics, local economic conditions, and aspects of biophysical conditions. We used this empirical work to build a framework that can be used to assess the factors that affect a group's ability to collaboratively implement projects on public lands. We propose that in future efforts to engage collaborative groups in the implementation of large-scale

forest restoration projects, the factors identified in this study should be considered due to the role they may play in facilitating or impeding successful collaborative participation.

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THESIS OVERVIEW

The Forest Landscape Restoration Act (FLRA) was passed by Congress and signed into law on March 30, 2009 as part of the Omnibus Public Lands Act. The FLRA established the Collaborative Forest Landscape Restoration Program (CFLRP), which has funded landscape-scale forest restoration efforts across 23 projects on national forest lands administered by the U.S. Forest Service. The program competitively funds restoration projects greater than 50,000 acres that are developed through partnerships between stakeholder groups and the U.S. Forest Service. The CFLRP is the most recent iteration of policy that experiments with a collaborative model for forest management and with its replication across 23 landscapes, it provides prime opportunities for learning about the successes and challenges of this model.

There are two CFLR projects located in Colorado – the Front Range Collaborative Forest Landscape Restoration Project and the Uncompahgre Plateau Collaborative Forest Landscape Restoration Project. I developed a research project that examined these two CFLR projects to address two research objectives: 1) with an eye towards the policy implementation literature, understand how stakeholders participate in collaborative implementation and the factors that influence their ability to participate, and 2) develop collaborative assessments of the stakeholder groups associated with the two CFLR projects, and understand how the groups' structures and processes have changed over time.

Between June and September 2016, I conducted 17 interviews with participants of the Front Range CFLRP and 10 interviews with participants of the Uncompahgre Plateau CFLRP, which included representatives from the Forest Service, other federal, state, and local government agencies, environmental organizations, researchers, and private industry. For the

collaborative assessment, I asked interviewees about the processes and structure of their collaborative group and to identify accomplishments, challenges, and lessons learned. To learn about collaborative implementation, I asked interviewees to describe their participation in the implementation process and their satisfaction with their involvement, as well as to discuss their successes and challenges in engaging in implementation. Following the interviews, I used Nvivo software to code the interviews in two rounds based on my two research objectives.

This research project produced two deliverables, which form the two chapters of my thesis. Chapter 1 is a research manuscript that will be published as a chapter in a book of research related to the CFLRP which is currently under development. Chapter 2 consists of two collaborative assessment reports which were conducted on behalf of the Colorado Forest Restoration Institute. The reports build off prior case studies conducted in 2010 and 2013, and capture accomplishments, challenges, lessons learned reported by stakeholders. The reports also identify how the collaborative groups' structures and processes have changed over time. I have included my interview guide in Appendix A. The coding schemes for both chapters are included in Appendix B.

CHAPTER 1

Understanding Collaborative Implementation under the Collaborative Forest Landscape Restoration Program

1. INTRODUCTION

1.1 Problem Statement

Over the last 30 years, the U.S. Forest Service's management of National Forest lands has undergone a major shift from scientific management to an increasingly ubiquitous model of collaborative governance to accomplish large-scale forest management for restoration and resilience. The Forest Service has implemented a number of policies and programs designed to support collaborative approaches, including the Collaborative Forest Landscape Restoration Program (CFLRP), which was established through the Omnibus Public Land Management Act of 2009 (P.L. 11-111). To date, this program has funded 23 large-scale (140,000-2,400,000 acres) forest restoration projects across the United States with the requirement that they are developed and implemented through collaborative processes. The Forest Service has prior experience with collaborative planning, but collaborative implementation represents a new policy goal for which there is little guidance or precedent to follow (Butler et al, 2014).

Due to its replication across many landscapes, the CFLRP offers a prime opportunity to learn about collaborative management in the context of increasingly formalized stakeholder involvement in the implementation of forest restoration projects. The purpose of this study was to investigate collaborative implementation under the CFLRP and identify lessons that would be applicable within the broader context of collaborative forest governance. To this end, we explored how CFLRP stakeholders and Forest Service personnel are collaborating during the

implementation process, the extent to which they are satisfied with their involvement, and the factors that influence the ability of stakeholders to participate in this process.

1.2 Background Information

1.2.1 The Rise of Collaboration from Scientific Management

Since the Progressive Era, a scientific management approach has driven decision-making in land management agencies, including the U.S. Forest Service (Lachapelle et al., 2003; Sousa and Klyza, 2007). Scientific management emphasizes top-down bureaucratic processes and centralized decision-making authority by agency professionals, whose expertise is thought to provide them with the ability to make sound and objective management decisions (Nelson, 1999). This type of rational, science-based decision making is especially well-suited for traditional forest management focused on maximizing and sustaining timber production. However, this approach also limits the role of the public in decision-making processes in favor of agency expertise and discretion.

During the 60's and 70's, there was increasing interest and engagement around the non-commodity values provided by public lands (e.g. recreation, wildlife), and the public's faith in the principles of scientific management declined, as the goals for forest management became more contested. During this time period, a number of environmental laws passed including the National Environmental Policy Act (NEPA) of 1969, the Endangered Species Act of 1973, and the National Forest Management Act of 1976. These laws still largely supported the tenets of scientific management but also expanded agency mandates and requirements around environmental protection (Sousa and Klyza, 2007). These laws also expanded the avenues for public participation, although this was generally limited to a review and comment role

(Wondolleck and Yaffee, 2000; Lachapelle et al., 2003). The implementation of these new environmental laws, the public's growing recognition and interest in environmental values, and the reluctance of land management agencies like the Forest Service to abandon the principles of scientific management all contributed to growing conflict surrounding public lands.

A desire for alternatives to the intractable conflict that began to dominate public land management led to experimentation with innovative new approaches, including collaborative governance (Sousa and Klyza, 2007; Williams et al., 2013). Collaborative governance is defined by Ansell and Gash (2007) as "a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets." Proponents of collaboration say that it provides a way to overcome conflict and decision-making gridlock, leads to shared learning, improves stakeholder relationships, and results in better decision-making (Daniels and Walker, 2001; Wondolleck and Yaffee, 2000). With the tight budgets of land management agencies, another important benefit of collaboration is the mobilization and sharing of resources (Wondolleck and Yaffee, 2000). Collaboration also faces criticisms; some argue commodity interests are often overrepresented in collaborative groups, that collaboration does not necessarily lead to better decisions and that it shifts decision-making control to a subset of stakeholders (Coglianese 1999; Kenney, 2000; McCloskey, 2000).

Nonetheless, collaboration has become more prominent than not, largely as a result of stakeholder expectations and activities in trying to develop strategies to have an increased role in public lands management (Cromley, 2005; Nie, 2010). Yet, even when agencies pursue collaboration in earnest, they are often constrained by inflexible administrative and procedural

requirements throughout the collaborative process (Butler, 2013; Wondolleck and Yaffe, 2000). Scientific management has deep roots in the agencies that manage public lands in the United States, and these institutions are slow to change. Therefore, an important question is how to create space for collaboration within existing institutional and practical contexts.

1.2.2 The Policy Tools to Support Collaborative Governance in Forest Management

In order to more formally build collaboration into forest management processes, stakeholders and the agency have tried a number of approaches. One of the first widely recognized collaborative initiatives is the Quincy Library Group (QLG), which formed in the early 1990's from stakeholders interested in overcoming the conflict surrounding the management of the Lassen, Plumas, and Tahoe National Forests (Sousa and Klyza, 2007; Terhune, 1999). The QLG collaboratively developed a Community Stability Proposal to guide management of the National Forests, which was rejected by the Forest Service. However, the QLG were successful in securing support for their proposal in Washington D.C. In 1999, the Herger-Feinstein Quincy Library Group Forest Recovery Act was passed in the Senate as an appropriations rider, directing the Forest Service to implement the Community Stability Proposal as a pilot project. The passing of this legislation was a major milestone in demonstrating a new model for the governance of public forestlands by giving the public meaningful authority to participate in decision-making. However, implementation was stymied by a number of factors, including overlapping legal mandates and a lack of buy-in from local agency implementers (Sousa and Klyza, 2007). The model of place-specific legislation for collaborative management of individual national forests has been proposed, but never tried again (Nie and Fiebig, 2010).

In the late 1990s, the federal government created new policies that emphasized or required collaborative approaches to forest management more broadly across the National Forest System. The Bush Administration supported giving state and local governments more decision-making authority in federal lands management, which resulted in new direction for the Forest Service (Nie and Fiebig, 2010). In 2001, Congress directed the National Fire Plan to be developed through a strategy of "close collaboration among citizens and governments at all levels" in order to mitigate fire risk and build the capacity of communities to respond to fires (WGA, 2001). The Healthy Forests Restoration Act (HFRA), passed by Congress in 2003, also promoted collaborative, community-based approaches to wildfire mitigation through the development of Community Wildfire Protection Plans (CWPPs) (Fleeger, 2008; Schultz et al., 2012). CWPPs are collaboratively developed and provide a way for communities to influence the location and funding of fuel reduction projects conducted by the Forest Service. However, HFRA faced criticisms regarding its ineffectiveness in impacting fire mitigation, its ability to reduce litigation of fuel management decisions, and its lack of consistent funding (Schultz et al., 2012). Despite its challenges, HFRA represented an important step towards the implementation of large-scale collaborative forest restoration.

The need for fuels management and restoration to occur at larger scales prompted communities across the country to form collaborative groups organized around forestry projects. In 2009, a new Forest Service program called the Collaborative Forest Landscape Restoration Program (CFLRP), which emerged out of agency-stakeholder discussions, was established to competitively fund restoration projects greater than 50,000 acres developed through partnerships between stakeholder groups and the Forest Service. The CFLRP utilizes a unique policy model to promote collaborative governance on National Forest lands, in that it requires collaboration

from the project planning stages through implementation and monitoring and competitively allocates funding to projects that demonstrate that they are priorities for investment socially, economically, and ecologically.

The CFLRP's requirement for collaboration to occur during the implementation stage of the project is unique among previous collaborative initiatives. In prior initiatives such as the development of CWPPs, collaboration would occur during the planning and, sometimes, monitoring stages, and implementation would be undertaken solely by the agency (Butler et al., 2015). As such, collaborative implementation represents uncharted territory, with little direction provided on how it should be approached. A challenge for Forest Service employees is complying with procedural requirements related to decision-making such as the Federal Advisory Committee Act while also implementing projects using collaborative groups' input (Butler, 2013; Schultz et al, 2012). The translation of this new policy goal into practice has implications for the effectiveness of the CFLRP as a policy tool for achieving collaborative governance within a system that was designed based upon the tenants of scientific management. Therefore, it is important to consider the factors that facilitate and hinder the participation of stakeholders in implementation in order to identify opportunities for improvement of the CFLRP and, even if the program does not endure, for future initiatives designed to promote collaborative forest management.

1.2.3 Policy Implementation

To understand the factors that affect policy implementation we looked to the public policy and administration literature, where groups of scholars have been developing policy implementation frameworks. These frameworks, along with supporting empirical work, guide

and explain why some policies find greater success in meeting their goals while others fall short; they speak to factors that affect policies and programs as a whole as well as variability in implementation (Matland, 1995; Moseley and Charnley, 2014; Sabatier and Mazmanian, 1980; Steelman, 2010).

For decades, scholars focused on two primary lenses to study policy implementation: the 'top down' and 'bottom up' perspectives (Sabatier, 1986). The 'top down' approach focuses on agency-wide factors, such as the statutory language of the policy and incentives to support implementation; these approaches view the policy designers and agency program leaders at the national level as key actors in the policy implementation process (Sabatier and Mazmanian, 1980). Steelman (2010) summarized successful implementation from the top-down perspective as "…a function of aligning formal structures and incentives." In other words, policy success is all about proper alignment of formal institutions.

A limitation of the top-down perspective is that it does not account for the role of local policy deliverers, whose proximity to on-the-ground implementation affords them a degree of influence (Matland, 1995). The ability of these 'street-level bureaucrats' to shape policy implementation at the local level to suit their wants and needs is a central tenant of the bottom-up perspective (Matland, 1995; Weatherly and Lipsky, 1977). The bottom-up model also focuses on the interaction between street-level bureaucrats and the local setting where implementation occurs, proposing that the ability of local implementers to adapt to contextual factors is a key determinant of success (Maynard-Moody et al, 1990).

Acknowledging the strengths and weaknesses of both top-down and bottom-up perspectives, some scholars see value in applying both approaches to policy implementation (Elmore, 1979; Sabatier, 1986; Steelman, 2010). Steelman (2010) presented a framework for

analyzing the implementation of innovative policy that proposes three main categories of factors – individual, structural, and cultural – which were derived from the policy implementation and public management literature, as well as institutional and sociological theory. The 'individual' category can be loosely tied to the bottom-up perspective, as it includes factors such as an individual's motivation for innovating and the social norms that predispose an individual to enact change. The 'structures' category builds from the top-down perspective by focusing on administrative rules and communication and the incentives that support innovation. The 'cultural' category is associated with institutional theory through its focus on shocks, framing processes, and social legitimacy as factors that affect whether a policy change is likely to occur or persist within a broader political culture; these variables are beyond the scope of this study. Steelman (2010) proposes that aligning and sustaining these three factors increases the potential for effectively implementing an innovative policy. Moseley and Charnley (2014) used a similar approach to understand the micro-processes driving the adoption of innovative policy – in this case, stewardship contracting by the U.S. Forest Service—and take implementation theory a step further. The authors developed a conceptual model of the dynamics that influence local implementers, which includes pressures from above (i.e. structural or top-down factors), internal dynamics (i.e. bottom-up factors), and external context, which is an important contribution to previous frameworks because it recognizes the importance of local ecological, socio-political, and economic factors in influencing policy implementation.

In summary, top-down, bottom-up, and a combination of these approaches have been used by scholars to present a more comprehensive picture of how policy implementation occurs at multiple levels. Policy implementation continues to be an exciting area of scholarship, particularly in cases like this where we are investigating the implementation of a novel-approach

to policy that explicitly involves collaborators in the process. In this case, a combined approach, following Moseley and Charnley (2014) and drawing upon past work as well is useful for understanding the factors that influence the success of the CFLRP in reaching its policy goals, specifically with regard to the mandate for collaborative implementation.

1.3 Summary and Research Questions

The Collaborative Forest Landscape Restoration Program is a critical policy experiment that is part of the broader evolution of approaches to collaborative forest governance. The translation of this policy goal into practice has implications for the effectiveness of the CFLRP and future approaches as policy tools for achieving collaborative governance. Therefore, we sought to evaluate policy implementation, with a specific focus on the mandate to evaluate collaborative implementation, investigating variables that influenced the ability of stakeholders to participate in the implementation of specific CFLRP project activities or "treatments" on the landscape. We used the policy implementation literature and considered structural and individual variables from Steelman (2010) with an eye towards external variables that might be relevant (Moseley and Charnley 2014), in order to address two primary research questions:

1) How are CFLRP project personnel and stakeholders collaborating through implementation and to what extent are they satisfied with their participation?
2) Drawing upon the policy implementation literature, what factors influence stakeholders' ability to participate in collaborative implementation?

2. METHODS

This study used qualitative methods to address the research objectives, including a case study approach. Case studies involve the in-depth investigation of contemporary phenomena within a real-life context, and are especially useful in exploring complex social phenomena (Yin, 2003). This study used case studies largely due to the importance of case-specific context in answering the research questions and exploring the phenomenon of collaborative implementation. The two CFLRP projects were treated as individual cases and compared to identify themes related to key similarities and differences.

The two CFLR projects that served as the focus of this study were the Front Range Collaborative Forest Landscape Restoration Project (FR-CFLRP) and the Uncompahgre Plateau Collaborative Restoration Project (UP-CFLRP). The FR-CFLRP consists of an 800,000 acre landscape along Colorado's Front Range and includes the Arapaho-Roosevelt and Pike and San-Isabel National Forests. The collaborative group associated with this project is called the Front Range Roundtable (FRRT), and the subgroup that focuses on the CFLR project is called the 'Landscape Restoration Team' or 'LR Team'. The UP-CFLRP spans a 572,000 acre landscape across the western slopes of Colorado, including parts of the Grand-Mesa, Uncompahgre and Gunnison National Forests. Although a loose network of groups is associated with this project, the primary collaborative entity is called the Uncompahgre Partnership (UP). These two cases were selected to accommodate regular interaction with participants and observation of the collaborative groups within operational constraints, including limited travel costs.

2.1 Data Collection and Analysis

We conducted 27 interviews with collaborative participants from both CFLR projects, including Forest Service personnel who engage with the collaborative groups. Interviewees included 17 individuals associated with the Front Range CFLRP and 10 individuals associated with the Uncompahgre Plateau CFLRP. We used a purposive sampling (pre-selected individuals) and a network sampling (individuals recommended by interviewees) approach to select individuals for interviews until a saturation of information provided by interviewees was reached (Singleton and Straits, 1999). We selected interviewees from meeting attendance forms provided by each collaborative group's facilitators and interviewed a broad variety of stakeholder groups so that perspectives from the different interests participating in the collaborative groups were represented. The interests represented in the interviews included environmental organizations, the U.S. Forest Service and other federal agencies, local and state agencies, and private industry. We asked interviewees about their perceptions of how collaborative groups contribute to the implementation process, barriers to participation in implementation, and examples of successful participation. They were also asked about their satisfaction with their ability to participate in the implementation process. We conducted interviews both in-person and over telephone, and all interviews were recorded and transcribed with permission from the interviewees.

In addition to conducting interviews, we also observed and participated in collaborative group meetings and site visits between August 2015 and August 2016. Using a participant-observer approach allowed us to gain richer detail regarding the experiences of the collaborative participants and helped us to develop a rapport with the interviewees (Creswell, 2009). This rapport may have helped collaborative participants feel more comfortable sharing some of the negative aspects of their experiences.

In August 2016, we joined Forest Service Washington Office staff on site visits to both Colorado CFLRP projects. Over a span of five days, we transcribed and recorded discussions between Forest Service staff and collaborative participants related to the projects. For both data collection efforts, we followed data collection and data storage procedures aimed at maintaining the confidentiality of study participants, as approved by the Institutional Review Board.

Following data collection, we coded the interview transcripts and observation data in two rounds using Nvivo software. Coding involves organizing the interview transcripts into segments of text that are categorized based on themes (Creswell, 2009). We approached the analysis of the data with some pre-determined themes related to our research questions but also identified new patterns that emerged throughout the analysis process. Some of the pre-determined themes included 'top-down' and 'bottom-up' to represent the two policy implementation approaches discussed in Section 2.3, which were later renamed 'structural' and 'individual' to maintain consistency with language used in Steelman (2010). New themes that were identified included 'collaborative characteristics', 'local economic conditions', and 'biophysical conditions' to characterize external factors influencing policy implementation.

3. RESULTS

In this section, I present the results that correspond to each of this study's research objectives. First, I describe the collaborative implementation process and satisfaction of stakeholders with this process, providing the results for each case study. Next, I present the factors that influence collaborative implementation identified from the cases.

3.1 Characterizing Collaborative Implementation and Participant Satisfaction

3.1.1 The Front Range Collaborative Forest Landscape Restoration Project (FR-CFLR Project)

The Landscape Restoration Team, or "LR Team" is a working group within the Front Range Roundtable that focuses on the planning, monitoring, and implementation of the CFLR Project. Interviewees reported varying levels of involvement in the implementation of the FR-CFLR project – some felt that the group had significant participation and others did not. Participation in the implementation process was described as occurring mostly through informal and indirect processes such as feedback provided during field trips and LR Team meetings, as well as through participation in monitoring. However, the group has attempted to formalize their participation in the implementation of the project through the development of an adaptive management process. Interviewees provided a mix of responses regarding their satisfaction with their level of involvement in implementation, but most reported that they were satisfied.

According to most interviewees, informal feedback provided by the collaborative was used to some extent to adjust and inform prescriptions and treatment locations. This feedback is typically provided during field trips and collaborative group meetings, including LR Team meetings. One interviewee described an instance where they witnessed these adjustments being made immediately before implementation occurred, stating "…the logging machinery was in the area working, but trees were being re-marked and units were being redesigned right up to the moment of the contractors entering that part of the woods to do the work. It was interesting and exciting to see some of the changes that were being made that quickly." While many interviewees reported that treatments have been adjusted in response to collaborative input, several interviewees expressed that some of their recommendations were not accommodated. One stakeholder stated, "[The Forest Service] tried to accommodate most of those

recommendations as they can, but there are certain recommendations that they can't achieve. One of them is a size of an opening, another one would be prescribed fire…we just haven't seen that happen as much, and that comes with a whole can of worms as well."

In addition to informal and indirect methods for collaborative involvement, there were also attempts to formalize collaborative implementation. The LR team developed an adaptive management process for the FR-CFLR project in which the monitoring conducted for the project would be evaluated on an annual basis and used to inform adjustments to treatments for the following year (Aplet et al, 2014). This adaptive management process was cited by several interviewees as a potential mechanism for the collaborative group to influence the implementation process, but participants questioned its success. One interviewee expressed that the lack of a clear feedback loop between monitoring and management action was a challenge for the group, stating, "We definitely struggle with closing the loop on adaptive management and really figuring out what it looks like beyond the box and arrow diagrams, what it looks like on the ground and how it actually works in a social setting, how the recommendations are delivered to the Forest Service for implementation, [and] how they're actually acted upon."

Interviewees provided a mix of both positive and negative responses regarding their satisfaction with the collaborative group's involvement in the implementation of the project. Some participants reported that they expected the Forest Service to incorporate more of the group's feedback into treatments. One interviewee stated, "…I took seriously the line in the forest landscape restoration act that talked about collaborative development and implementation of projects. I thought that there would be more actual rolling up the sleeves, sitting down at the table and designing projects with the Forest Service than there has been. That's been a disappointment to me." On the other hand, several interviewees also reported satisfaction with

their involvement in implementation, including one stakeholder who said, “I think it's pretty impressive and positive that the Forest Service has included this big messy element of collaboration stake holder input into its planning and implementation of the restoration work.”

3.1.2 The Uncompahgre Plateau Collaborative Restoration Project (UP-CFLR Project)

Unlike the FRRT, there was no formal working group associated with the implementation of the UP-CFLRP. Overall, interviewees reported few instances of direct involvement in the implementation of treatments for the UP-CFLR project. Instead, interviewees generally characterized their involvement in implementation as occurring indirectly through participation in the planning and monitoring of the project. There was also broad agreement amongst participants that they were satisfied with the opportunities provided for involvement in the project.

The stakeholders were heavily involved in the planning processes for two NEPA efforts (the Unc Mesas and Escalante projects) and in jointly developing restoration principles to guide the projects. Some interviewees discussed how stakeholder involvement in the planning process and in developing restoration principles helped to ensure that their vision for the landscape would be carried into implementation. “…[The stakeholders] feel like the general principles are being translated into actions on the ground,” explained a Forest Service employee.

Despite the strong participation of stakeholders in planning efforts, several interviewees reported that there was less involvement from stakeholders as the project transitioned into implementation. When asked about the collaborative group’s role in implementation, one interviewee explained, “…there's not a strong role for the collaborative except to check and see if it's going the way that they thought it was going to be going.” This ‘checking in’ on

implementation was described as a largely informal process accomplished through annual field trips and stakeholder meetings in which Forest Service personnel report on that year's accomplishments and monitoring results and discuss the treatments proposed for the following year. However, several interviewees reported that the feedback provided during field trips has led to adjustments in treatment prescriptions. To illustrate this, one Forest Service employee stated, "There's been a few places where people have noted… 'Oh, the trees are spaced a little more evenly than we like, so maybe think about doing a little bit more clumping.' Although, it wasn't anything major, we just talked to the marking crew about that." Several interviewees also described the involvement of the Mule Deer Foundation in awarding and managing contracts through a Master Stewardship agreement with the Forest Service as another example of stakeholder participation in project implementation.

There was overwhelming agreement amongst interviewees that they felt satisfied with the collaborative group's level of involvement in the project and in the implementation process. One interviewee noted that further involvement may in fact be counterproductive, stating "It's great to get the feedback and make sure everybody's onboard with what you're doing, but if you get too much involvement, then you could start getting nothing done because you're spending your whole time communicating." They continued, "I think the level of involvement has been good."

3.2 Factors Influencing Stakeholder Participation

In both case studies, interviewees discussed several major factors that impeded and facilitated the ability of stakeholders to participate in the implementation of the CFLR projects associated with their collaborative group. Through analysis, I organized these factors into five

main categories, including: structural factors, individual factors, collaborative characteristics, local economic conditions, and biophysical conditions.

3.2.1 Structural Factors

Structural factors identified by interviewees included compliance with NEPA, statutory clarity, and the Forest Service's institutional culture. The NEPA was a major top-down factor discussed by interviewees for both CFLR projects. For the FR-CFLR project, it impeded collaborative participation in implementation, but by contrast, for the UP-CFLR project, it was viewed as an avenue for participation. A large portion of implemented acres from the FR-CFLR project were the result of NEPA 'shelf-stock', which meant that the prescriptions implemented in these areas were constrained by the sideboards set in the proposed action of the NEPA decision. "Where we didn't have flexibility was in the size of openings. NEPA decisions limited the size of openings to a quarter acre, and so when…the collaborative group actually wanted openings of an acre to 5 acres to 10 acres in size, we couldn't make that happen," explained one interviewee. Treatment areas covered by shelf-stock NEPA had less flexibility and had not incorporated the collaborative group's input. On the other hand, stakeholders associated with the UP-CFLR project jointly developed restoration principles and engaged in planning prior to the development of NEPA for the project areas. When asked to characterize their involvement in the implementation of the project, interviewees often pointed to their participation in planning that fed into the NEPA as an avenue through which they influenced implementation.

Another top-down factor identified by interviewees was the lack of clarity in the statutory language of the Omnibus Public Land Management Act of 2009 related to the requirements for collaborative implementation. One interviewee proposed that the statute needed to "…be more

explicit about what is meant by collaborative implementation, because just including that term in the legislation didn't get it done." Finally, a hallmark characteristic of government agencies like the Forest Service is that they are slow to change. This institutional characteristic was discussed by one interviewee who stated, "…the U.S. Forest Service is this huge entity and to get them moving in one direction or another takes an incredible amount of time, energy, and, quite frankly, probably frustration, and then maybe you [can] get them to do something a little bit better than they had been doing."

3.2.2 Individual Factors

Individual factors relate to the characteristics of local implementing agents – Forest-level employees – and the local context which a policy is implemented. The role of key Forest Service line officers in facilitating collaborative implementation was discussed by participants of both projects. Forest Service personnel associated with the UP-CFLR project generally were viewed positively for their role in fostering productive collaboration. For example, one stakeholder referred to a specific Forest Service line officer as "…the central pivot point of the whole collaborative process". On the other hand, the FR-CFLR project experienced local implementers that both facilitated the collaborative implementation process and impeded it. The organizational culture of individual Forests also influenced collaborative implementation. Several participants of the FRRT discussed how the staff on the two Forests involved in the project possessed different attitudes towards collaboration. One interviewee stated, "The people, the individuals on the [one forest] were more attuned to collaboration, more attuned to ecosystem management, trying to do things differently than we'd done before in order to achieve ecological gains. On the [other forest] much less so."

3.2.3 Collaborative Characteristics

Characteristics of the collaborative groups associated with the CFLR projects also influenced collaborative implementation. The existence of trust between stakeholders and the Forest Service, as well as capacity to participate were both discussed by interviewees to explain the collaborative group's involvement in implementation. For instance, many of the stakeholders participating in the UP-CFLR project have been discussing restoration on the Uncompahgre Plateau with one another for over a decade. Due to the long history of collaboration with the group, there was a great deal of trust built with the Forest Service. This point was reiterated many times throughout interviews with participants. "We already had years of working together as a collaborative by the time CFLRP came along, so we had already gotten over the rough patches; we'd already learned to trust the Forest Service and each other," stated one interviewee. Trust was cited several times by interviewees to explain why they felt comfortable with less involvement in the implementation process. While participants of the FR-CFLR project did not explicitly discuss trust, the responses of several interviewees indicated some degree of mistrust with the Forest Service to carry out their recommendations.

Collaborative capacity includes the agency and group members' technical expertise to participate meaningfully in implementation, as well as group members' funding and time to participate. Stakeholders associated with the UP-CFLR project expressed that there was at times, limited capacity on the part of the Forest Service to participate in collaboration. One interviewee stated, "…the Forest Service people just didn't have as much time as you wished they would due to people were retiring or maybe being understaffed, people working two jobs." A lack of capacity on the collaborative group's side was also noted, as participation from stakeholders has waned in recent years.

3.2.4 Local Economic Conditions and Biophysical Conditions

Stakeholders reported that operability sometimes limited their ability to participate in implementation, which is related to biophysical conditions and local economic conditions. A challenge identified by interviewees was the translation of the collaborative group's design criteria and objectives to the contractors who conduct the implementation of the treatments. When one interviewee relayed that they had been told by Forest Service personnel that, "…it's very difficult to explain instructions in the operating guidelines for the people that actually do the treatments from the machines on the ground." This difficulty in translating prescriptions is linked to the capacity of operators, which can be viewed as a function of local industry capacity and expertise. Additionally, the biophysical conditions of treatment areas also limited where work could be performed. One interviewee mentioned an instance where the collaborative group's recommendation on treatment location could not be accommodated, stating, "The location of the treatment area was predetermined by operability constraints and [the Forest Service] basically said, 'The only place that we can harvest timber is on the flat part of the mountain at the top.' Even though all the analysis showed that all the values at risk were down at the bottom of the hill where operability was severely constrained."

4. DISCUSSION

4.1 A Comparison of Collaborative Implementation Between the Case Studies

Key differences between the two projects included the stakeholders' level of involvement in planning and NEPA before the projects were implemented. The influence of stakeholder participation in planning on implementation was discussed by interviewees from both projects. A project's proposed action sets sideboards for implementation, determining the flexibility of

treatments to accommodate adjustments proposed by collaborative participants. The projects implemented through the UP-CFLR project underwent NEPA analyses that the collaborative group participated in. On the other hand, large portions of the FR-CFLR project came from 'shelf-stock' NEPA. The collaborative group was not involved with these NEPA analyses. This shelf-stock NEPA had limited flexibility to accommodate collaborative input, which frustrated some stakeholders and also impeded their participation in the implementation process. Collaborative participants clearly viewed participation in planning as an important avenue for influencing implementation. Since a project's NEPA can shape the ability of stakeholders to participate in implementation, this finding suggests that for programs like the CFLRP, the Forest Service can maximize the potential for collaborative implementation by investing in new NEPA analyses and providing stakeholders opportunities to be engaged early in these processes. For researchers, the lesson learned is that collaborative efforts must be understood in the historical context of collaboration from the onset of projects, which means that collaborative groups should be studied longitudinally rather than as point-in-time snapshots (Cheng et al, 2015).

Although the projects' approaches to NEPA differed, stakeholders reported similar types of participation in the implementation of the projects. Both groups of interviewees provided feedback on implemented treatments during collaborative group meetings and field trips, participated in monitoring, and generally provided feedback informally through conversations with Forest Service personnel. Additionally, participants of both projects felt that the Forest Service had to some degree changed prescriptions and adjusted implementation in response to feedback. However, most interviewees were rather ambiguous in describing the implementation process and their role in it. Although the interviewees reported similar types of participation, their levels of satisfaction with this participation varied between projects. Participants of the UP-

CFLRP overwhelming reported satisfaction with their participation in implementation, while participants of the FR-CFLRP reported mixed levels of satisfaction. As a result, UP-CFLRP participants did not seek out additional opportunities for involvement, while FR-CFLRP participants attempted to formalize their involvement in implementation through their adaptive management strategy.

4.2 A Framework of Factors Influencing Stakeholder Participation

In both case studies, interviewees discussed several major factors that impeded and facilitated the ability of stakeholders to participate in the implementation of the CFLR projects. These factors are organized below (Figure 1) into five main categories – structural, individual, collaborative characteristics, local economic conditions and biophysical conditions – within an institutional or external context.

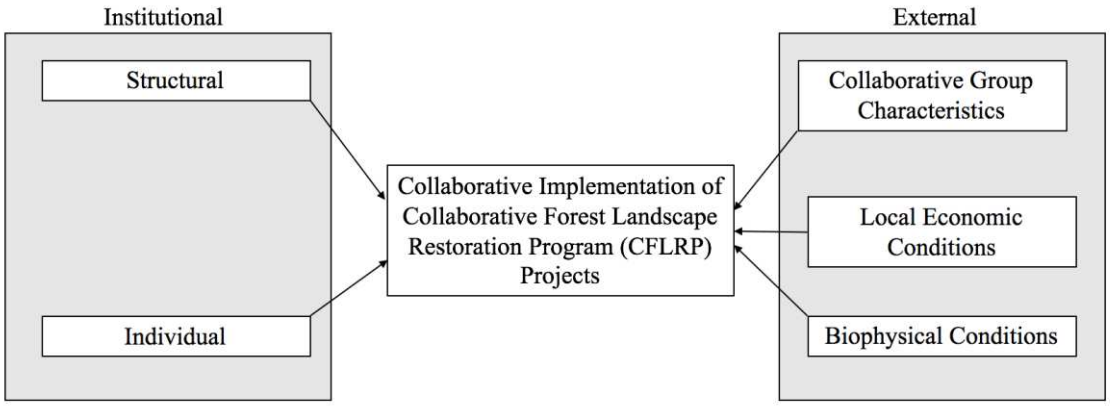

Figure 1: Factors Influencing Collaborative Group Involvement in Implementation

The framework for collaborative implementation (Figure 1) builds off of the policy implementation literature and its emphasis on top-down and bottom-up approaches while combining aspects of the conceptual models presented in Steelman (2010) and Moseley and

Charnley (2014). We use Steelman's terminology and categorization, structural and individual, to describe the factors tied to the top-down and bottom-up approaches. Similar to Moseley and Charnley (2014), we also identified factors that operate outside of the institutional context which we categorize broadly as 'external factors.' The three main factors within this category are collaborative group characteristics, local economic conditions, and biophysical conditions. The five factors identified in this study may help to explain why attempts to use a collaborative approach to implementation achieve success or ultimately fail and are discussed in greater detail below.

The informal nature of stakeholder participation and the ambiguity of the implementation process described by interviewees are likely related to structural factors – the lack of statutory clarity and the lack of guidance from the legislation and higher levels of the Forest Service directing how collaborative implementation should occur. Not only is there little institutional support guiding how the Forest Service should approach collaborative implementation, but the need to comply with other policies such as NEPA and the Federal Advisory Committee Act may also help to deter the formalization of collaborative group involvement in the implementation process. The lack of structural guidance to shape the collaborative implementation process suggests that an individual (or bottom-up) perspective is crucial to understanding the variability in how this policy goal has been translated on the ground.

Without formal avenues or guidance to structure collaborative implementation, collaborative participants report that Forest Service employees play a significant role this process as street-level bureaucrats who possess a high degree of discretion to implement policy at the ground level (Weatherley and Lipsky, 1977). The Forest Service employees discussed by interviewees were often characterized as either a champion of collaboration or a barrier to it.

With the degree of influence that line officers and other Forest Service employees have in translating collaborators' objectives in the implementation process, it is critical that collaborative projects implemented on National Forest land are staffed by Forest Service employees who are 'champions' of collaboration. The evidence of differing attitudes towards collaboration across the two National Forests associated with the FR-CFLR project may also indicate that the agency needs to instill collaborative values more broadly in its organizational culture. This would require putting in place structural incentives and guidance to support better field-level implementation.

Interviewees also discussed factors that operate outside of the Forest Service's purview, which we broadly categorized as 'external' factors, specifically, collaborative characteristics, local economic conditions, and biophysical conditions. Similar to Moseley and Charnley (2014), we found that these external factors play an important role in influencing the implementation of this policy innovation. This study's focus on the influence of collaborative dynamics on policy implementation is a key contribution to the conceptual models presented in Steelman (2010) and Moseley and Charnley (2014). Moseley and Charnley (2014) include collaborative groups as a consideration related to social and political conditions; we argue that, particularly for policies that are collaboratively implemented, the dynamics within collaborative groups play a critical role in the implementation process. In this study, collaborative characteristics refer to key attributes of the collaborative groups such as trust and capacity. With the UP-CFLR project, stakeholders discussed how they trusted the Forest Service, in light of their history of collaboration, to implement according to the values and goals they had jointly identified. In this case, high trust resulted in less involvement in implementation. On the other hand, the dissatisfaction with implementation and perception that some Forest Service personnel were

barriers to collaboration indicates that some participants of the FR-CFLR project trusted the Forest Service less. With less trust that the Forest Service will implement projects to the stakeholders' satisfaction, it seems logical that participants of the FR-CFLR project sought opportunities for greater involvement in the implementation process, such as developing a collaborative implementation strategy. As indicated by interviewees, the capacity of collaborative groups can also influence their ability to participate in implementation. Participating in planning processes, meetings and field trips take up a considerable amount of time and represent major commitments from partners. Simply put, collaborative implementation is not possible if stakeholders do not have the resources to participate.

The final two categories of factors include local economic conditions and biophysical conditions, which are related to the operability of treating a project area. Even with all other factors aligning to support collaborative implementation, the treatment prescriptions need to be translated on the ground. A challenge for collaborative projects is that some operability constraints may not be apparent until implementation has already begun. Nonetheless, we found that local industry capacity and expertise, as well as topography were key variables for these two projects.

The five factors discussed above – structural and individual factors, collaborative characteristics, local economic conditions, and biophysical conditions – illustrate the numerous pressures shaping and influencing the collaborative implementation process. The framework presented in this study builds from the policy implementation literature by combining top-down and bottom-up perspectives, while also accounting for the influence of external dynamics in shaping collaborative implementation. This framework can be used to evaluate and compare other cases to identify potential barriers to collaborative implementation, and it may also provide

insight into where collaborators should focus to improve their influence either on specific projects or as they pursue future policy innovations.

5. CONCLUSION

Despite its roots in scientific management, the Forest Service has moved towards a new model for land management and decision-making – collaborative governance. This shift can be traced through the various policies that have been implemented over the past several decades, including the establishment of the Collaborative Forest Landscape Restoration Program through the Omnibus Public Lands Act of 2009. The mandate for restoration projects to be collaboratively implemented represents a new policy goal that has little precedence or guidance. This research study investigated this new policy goal by examining how two Colorado-based CFLR projects approached collaborative implementation, using the policy implementation literature to understand factors that influence its translation into practice. Structural and individual factors, collaborative characteristics, local economic conditions and biophysical conditions were identified by interviewees to influence the ability of stakeholders to participate in implementation.

The critical need for large-scale forest restoration means that projects are being conducted across the nation using a variety of policy tools and authorities. Even if the CFLRP is not reauthorized in 2019, the collaborative groups and Forest Service officials who developed strategies for implementing CFLR projects in a collaborative manner have established new precedents for what a collaborative restoration process can look like and these lessons will persist over time. The need to not only collaboratively plan but collaboratively implement restoration projects is also likely to persist, which means that it is important to understand factors

that influence collaborative implementation. To this end, the framework presented in this study can be useful for evaluating and comparing other cases to identify potential barriers to collaborative implementation.

A limitation of this research study is its limited sample size of two CFLR projects of the 23 projects underway across the United States. The two case studies represented in this study are only a snapshot of collaborative implementation within a larger, nation-wide program. To broaden understanding and validate this model, it will be important for future studies to take a closer look at how collaborative implementation has been approached and to capture factors that impact stakeholder participation for other CFLR projects.

CHAPTER 2

A Collaborative Assessment of Two Colorado-Based Stakeholders Groups Participating in the Collaborative Forest Landscape Restoration Program

1. INTRODUCTION

Over the last several decades, collaborative groups in Colorado have emerged to address critical issues such as wildfire risk, community protection, wildlife habitat and forest health along the Western Slopes and Front Range of Colorado. Along the Western Slopes, a network of collaborative groups formed beginning with the Public Lands Partnership (PLP) in 1994, which was established as a forum for stakeholders to discuss declining Mule Deer populations and other resource concerns (Knapp, 2010). Subsequent projects related to forest restoration on the Uncompahgre Plateau led to the formation of a second group, the Uncompahgre Partnership (UP), which focused on implementation of this work. In the early 2000's, an entity called UncCom was established as a 501(c)3 to administer funding for both the PLP and for restoration work being implemented through the UP. When the groups were awarded funding through the Collaborative Forest Landscape Restoration Program in 2010, they created the Western Colorado Landscape Collaborative (WCLC) to serve as an umbrella organization for this network of collaborative groups.

Meanwhile, concerns related to community protection and hazardous fuels reduction along the Front Range led to the formation of the Front Range Roundtable (FRRT) in 2004 (Mattor, 2013). The group's early efforts to prioritize treatments across Front Range resulted in a vision document called *Living With Fire: Protecting Communities and Restoring Forests* which identified a treatment area of 1.5 million acres. In 2008, the FRRT initiated a demonstration

project called the Woodland Park Healthy Forest Initiative which treated hazardous fuels in a 41,000 acre project area near Woodland Park, Colorado. The FRRT made further progress in meeting the goals identified in *Living With Fire* when they were awarded funding through the Collaborative Forest Landscape Restoration Program in 2010 to treat 32,000 acres across the 1.5 million acre priority landscape.

Over time, the participants of these collaborative groups have experienced successes in advancing the groups' goals, encountered and overcome challenges, and have formed valuable working relationships with one another. With the scale and urgency of the restoration work ahead of them, collaborative groups do not always have time or foresight to step back and reflect on what they have achieved and the lessons they have learned along the way. To capture these accomplishments, challenges, and lessons and share them with the broader community of collaborative restoration practitioners, the Colorado Forest Restoration Institute (CFRI) conducted a series of collaborative case studies in 2010 and 2013 with these two collaborative groups. To build off these prior efforts and capture how these groups have changed over time, the most recent collaborative case studies were conducted in 2016.

These case studies examine the impact of the FRRT and WCLC's ongoing efforts with their respective Collaborative Forest Landscape Restoration Projects – the Front Range Collaborative Forest Landscape Restoration Project (FR-CFLRP) and the Uncompahgre Plateau Collaborative Forest Landscape Restoration Project (UP-CFLRP). A combination of interviews with collaborative group members and observations from site visits were used to develop detailed assessments of the collaboration occurring with both groups. Semi-structured interviews were conducted with 17 participants of the FRRT and 10 participants of the WCLC, representing a diversity of interests and perspectives, including the US Forest Service and other federal land

management agencies, state agencies, local and national environmental conservation organizations, academic institutions, and research organizations. The interview data was transcribed and coded, which allowed for the identification of themes and patterns in the data.

In addition to highlighting accomplishments, challenges, and lessons learned, this study also identifies how the collaborative group's structure and processes have evolved over the past seven years by drawing comparisons from previous case studies conducted in 2010 and 2013 by the Colorado Forest Restoration Institute.

2. THE COLORADO FRONT RANGE COLLABORATIVE FOREST LANDSCAPE RESTORATION PROGRAM

2.1 Accomplishments

Participants of the Front Range Roundtable identified four accomplishments associated with the FR-CFLRP: 1) increased capacity; 2) improved implementation of restoration treatments; 3) the development of a monitoring program; and 4) the sharing of knowledge and development of new research. These accomplishments are discussed in further detail below.

2.1.1 Building Capacity

Capacity refers to the ability of an organization to accomplish their objectives and includes its financial resources, human resources such as technical expertise, and social and political capital. In the previous case studies, participants of the FRRT discussed how the group has at times been successful in increasing its capacity, yet they have also acknowledged that maintaining capacity is a challenge. For example in the 2010 case study, participants discussed how the group was successful in working together to fundraise and leverage funding to

accomplish restoration work on the ground. However, they also expressed concerns about the ability of the FRRT to maintain funding into the future, particularly for environmental organizations partnered with the group. In addition to concerns about funding, interviewees in 2010 discussed their concerns regarding the time-consuming nature of collaboration and the ability of partners to stay actively engaged long-term. In the 2013 case study, interviewees viewed the FRRT's focus on the FR-CFLRP as a challenge because it decreased the group's capacity to accomplish work around its other objectives, such as community protection and biomass utilization.

In the 2016 interviews, FRRT members reported that participation in the FR-CFLRP has led to increased capacity for the collaborative group and individual partners in several ways. As a whole, the FRRT has benefitted from increased capacity to implement restoration work through the funding provided by the FR-CFLRP. Several interviewees also reported that the FRRT has been successful in leveraging the funds received from the CFLRP with outside funding sources, including one participant who stated, "[CFLRP funding] definitely brought in additional funding, both through State and private [funding sources]".

Furthermore, partner organizations of the FRRT have benefitted from increased capacity. In order to comply with programmatic requirements for monitoring, the Forest Service contracts ecological and socioeconomic monitoring with the Colorado Forest Restoration Institute (CFRI), a science application and outreach program in the Department of Forest and Rangeland Stewardship at Colorado State University. CFRI has developed the human resource base and technical expertise to conduct ecological and socio-economic monitoring, and, in turn, serves as an asset for the FRRT and other collaborative forestry groups across Colorado and beyond. The consistent availability of funding over the project's duration has also allowed the Forest Service

to hire and maintain employees on a more permanent basis. Sustaining a workforce with knowledge and practice about fuel reduction, forest restoration, and collaboration is important to the US Forest Service's organizational capacity. However, while many FRRT members acknowledge that the CFLRP has broadly increased the group's capacity, some members also voiced concerns about the ability of the group to sustain funding and capacity into the future, especially with the end of the project's funding cycle approaching.

Overall, it is apparent that receiving CFLRP funding has been a boon for the FRRT's capacity to conduct restoration work and the benefits have accrued to member organizations. While this increased capacity is cited as an accomplishment, concern about sustaining capacity into the future is a recurring theme discussed by participants in both 2010 and 2016. The challenge of maintaining the capacity to accomplish the FRRT's objectives is likely to persist due to the intermittent nature of most funding sources.

2.1.2 Improved Implementation of Restoration Treatments

Overall, FRRT members reported that the implementation of restoration treatments at the stand-level has improved throughout the span of the FR-CFLRP project. One member stated, "…the results of the projects are vastly better. We now have something that all of us…feel like we can walk out in the middle of one of these projects and think 'Yes, this looks better than it did [compared] to the projects [from] ten years ago.'"

Several members pointed out that the Forest Service has incorporated the FRRT's recommendations to increase spatial heterogeneity, including increasing the size of openings and retaining groups of trees. However, members also acknowledged that the Forest Service has not always been able to accommodate the FRRT's recommendations for a variety of reasons. For

example, some projects have less flexibility to adjust treatment prescriptions due to the sideboards defined in their NEPA documents. One member described the progress they witnessed despite the challenge of working within these constraints, stating "if you look at that prescription, it's way different than a treatment that was done under the same NEPA a year or two earlier. Could [the Forest Service] do everything everybody wanted right away? No, but…they [did] take… that input and modify the treatment significantly within the context of what was pre-approved."

While many FRRT members agree that treatments have improved, some members feel that they have not yet hit the mark in achieving the group's goals for restoration at the landscape-level. Members identified additional challenges associated with implementation, which are discussed further in the 'Challenges' section.

2.1.3 The Development of a Monitoring Program and Adaptive Management Plan

Monitoring was cited as a challenge for the FRRT in the 2010 case study. Participants felt that an adaptive management approach was needed so that they could learn from the treatments being implemented on the ground but also felt that the collaborative group lacked the capacity to effectively implement a robust monitoring program. In the 2013 case study, the group's progress in outlining an adaptive management approach was highlighted as an accomplishment, and participants reported that the monitoring efforts were a 'work in progress'.

In the 2016 interviews, participants reported that the FRRT's participation in the CFLR program has led to an increased focus on monitoring and this focused attention has resulted in considerable progress. The Landscape Restoration Team in particular has dedicated significant effort towards developing the monitoring program and adaptive management plan. For example,

the LR Team holds annual meetings to analyze monitoring data and develop new recommendations.

Overall, members of the FRRT expressed satisfaction with these efforts, reporting that the monitoring program helped to bring together a diverse group of partners and scientists. Some members also discussed how the monitoring program in combination with an adaptive management approach has helped to identify aspects of the projects that need to be adjusted. Reflecting on the FR-CFLRP's progress over the past several years, one member stated, "with more emphasis on the monitoring and the adaptive management, I think it's only going to get better." However, there was also some disagreement among the members regarding the degree to which monitoring has influenced changes to the implementation of restoration treatments.

2.1.4 The Sharing of Knowledge and Development of New Research

Interviewees from the 2010 case study discussed concerns about a lack of communication and data sharing amongst stakeholders during the design of the monitoring program. In contrast, participants from the 2016 interviews discussed how the sharing of knowledge amongst scientists and practitioners and the development of new research were important benefits that resulted from participation in the FR-CFLRP. One member described how the projects led to "direct dialogue between scientists, researchers and practitioners..." which has been helpful in translating research and making it more accessible for managers. This transition from the 2010 case study suggests that communication between stakeholders related to the FRRT's research and monitoring efforts has seen improvement.

Furthermore, scientists involved with the FR-CFLRP have benefitted from their engagement with practitioners by identifying gaps in science and areas for future research that

have direct applications for practitioners. As one scientist stated, “the Roundtable members have given me several very good, useful, ideas for research projects that we've developed collaboratively but I probably wouldn't have known about or realized were as important without the input coming from the roundtable about this question or problem.” The development of new research was viewed as important especially due to the lack of current research specific to Front Range ecosystems.

2.2 Challenges

As with any collaborative effort, challenges and disagreements are inevitable. Members of the Roundtable described three main challenges, including collaborative implementation, operationalizing adaptive management, and achieving restoration at the landscape scale. It is worth noting that collaborative implementation and adaptive management are closely linked, and the emphasis on these challenges are particularly relevant as the project shifts away from planning-related activities and focuses on implementing treatments on the ground.

2.2.1 Collaborative Implementation

While FRRT participants have witnessed improvements in the implementation of restoration treatments through the FR-CFLRP, several interviewees also voiced the need for further improvement in the integration of the FRRT’s recommendations for implementation under the FR-CFLRP and clarity regarding this process. One member discussed how the Forest Service has struggled to incorporate some of the group’s recommendations, specifying, “They've tried to accommodate most of those recommendations...but there are certain recommendations that they can't achieve.”

Several members expressed frustration that the level of collaboration involved in the FR-CFLRP had fallen short of their expectations, with one member stating, "I took seriously the line in the Forest Landscape Restoration Act that talked about collaborative development and implementation of projects. I thought that there would be more actual rolling up the sleeves, sitting down at the table and designing projects with the Forest Service than there has been. That's been a disappointment to me." The collaborative planning effort surrounding the Upper Monument Creek project was cited specifically as an example where these expectations had fallen short. Several members acknowledged the institutional challenges that make it difficult for the Forest Service to integrate collaborative input into management of the FR-CFLRP, with one member stating, "One of the realities of life is that the Forest Service has so many regulations and restrictions and constraints that they operate under that we really shouldn't, as stake holders, expect to have a huge influence on their process or their implementation."

Frustration with their limited influence on implementation was also voiced by participants in the 2013 case study. The reemergence of this challenge in the most recent interviews suggests that improving clarity around the FRRT's role in the implementation of the FR-CFLRP is a critical need that should be addressed by the Forest Service.

2.2.2 Operationalizing the Adaptive Management Process

Related to the challenge of collaborative implementation, many members also discussed the difficulty of closing the adaptive management loop. "We definitely struggle with...closing the loop on adaptive management and really figuring out what it looks like beyond the box and arrow diagrams. What it looks like on the ground and how it actually works in a social setting,

how the recommendations are delivered to the Forest Service for implementation, [and] how they're actually acted upon," explained one FRRT member.

One of the difficulties in operationalizing adaptive management has been a mismatch in timelines between the Forest Service and the Landscape Restoration team. The LR team has held a 'monitoring jam session' meeting every spring, in which the monitoring data collected during the prior year is analyzed and discussed to develop management recommendations. However, members of the LR team have realized that by the time this meeting is held, plans for future implementation have already been finalized by the Forest Service and it is not feasible to immediately alter treatment plans for the upcoming year. This challenge can be addressed by coordinating with Forest Service personnel to schedule monitoring jam session meetings in time for their recommendations to be integrated into the following year's implementation plans.

2.2.3 Achieving Restoration at the Landscape Scale

Another challenging aspect of the FR-CFLRP is the large scale targeted for restoration. Members discussed the difficulty in understanding how to measure the project's impacts at the landscape level and questioned whether the FR-CFLRP was making a difference at that scale. For example, one member stated, "I think we're still struggling to jump up to the landscape scale and answering the question, 'Are we making a difference...?'" Another member observed this scale issue in treatments that had been implemented through the project, noting "It's interesting because when you walk through those treatments you see the concepts, but where it's been missed is in the scale." The need for an increase in prescribed burning was also reiterated by many FRRT members, and several suggested that this would help move the FR-CFLRP projects towards achieving landscape-level restoration. However, these members also acknowledged the

difficulty in increasing prescribed burns due to a lack of capacity and lack of social license in Front Range communities.

2.3 Lessons Learned

In addition to accomplishments and challenges, members also identified several 'lessons learned'. The importance of having tough discussions and listening to different perspectives, and that collaboration is challenging and costly were all discussed as important lessons that could be shared with other collaborative groups engaging in restoration projects.

2.3.1 Collaboration is Costly and Requires Hard Work

Many FRRT members discussed how collaboration is difficult, slow-going, and costly in terms of funding, time, and effort. One member discussing the costs of collaboration stated, "As much as we see benefit to these collaboratives and trying to develop initiatives through these collaboratives, actually having the capacity to carry through…some of the initiatives can be a challenge. It's above and beyond in some cases what you're already doing with your 9:00 to 5:00."

Despite the hard work and costs associated with collaboration, many members think that the effort is worthwhile and produces results. This lesson was summarized by one member as, "...collaboration is hard. It's hard to figure all that stuff out, and it takes a lot of time. You're not going to speed the process up by adding a collaborative process or a group to these projects, but I think you come out with a better product and its time worth spending."

2.3.2 The Importance of Having Tough Discussions

Another 'lesson learned' identified by FRRT members was the importance of having difficult discussions about restoration. Although members are generally in agreement surrounding the broad goals of the FRRT, several members talked about the difficulty of defining restoration, determining restoration goals, and agreeing on what treatments should look like. One member observed, "I thought we all had a shared vision on what restoration is and looks like. We are still hammering that out 5 years later. It's more complex and complicated than we had envisioned." FRRT members also discussed the group's ability to have open dialogue about these difficult issues as an important aspect of its success. One member noted, "For the Roundtable, I believe that they have been on this journey of having lots of tough discussions, specifically in the landscape restoration theme, and I think that they have come a long way because of it...I would encourage [them] to continue to have those tough discussions."

2.3.3 The Importance of Listening to Different Perspectives

In addition to having difficult discussions, members also talked about the importance of listening to the different perspectives represented within the collaborative group. As one member stated, "I think the power of the group is the people who get together who don't necessarily see things the same way, but they listen to those who have a little bit [of a] different opinion. I think that's really important. I think that characterizes the majority of the group."

Furthermore, several members highlighted the respectful and civil dialogue that occurs at roundtable meetings despite any disagreements. Members refer to this civil dialogue as an important key to success. This lesson was observed by one member who said, "I think what's helpful is that there [are] so many of these different perspectives that come together...there's a

high level of respect around the table that I've seen, and I think it leads to better dialogue and better communication."

2.4 Changes in Process and Structure

A basic assumption underlying any collaborative effort is that participants will have a role in the decision-making process. However, the ability of stakeholders to participate in decision-making and the nature of that participation can be shaped by the processes for involvement that the collaborative group has adopted, as well its organizational structure. As a result, examining the structure and processes that the FRRT has adopted can help us understand where decision-making authority lies and how readily stakeholders can access it. In the context of the CFLRP, studying how processes and organizational structure have changed over time can provide insight into whether participation in the program changes the nature of collaboration in collaborative groups. Since the CFLRP is a Forest Service program that prioritizes restoration work on National Forest lands, some questions worth investigating include whether participation in the program changes the role of the Forest Service within collaborative groups and how collaborative groups' structures shift to support the project.

2.4.1 Changes in Structure

In the 2010 case study, members of the FRRT discussed the flexible, self-organizing nature of the group and how it provided them with a sense of ownership. Members also found that this flexibility allowed the group to be adaptive and change over time. In addition, agencies participated in the collaborative group and provided support, but did not take the lead in the Woodland Park Healthy Forests Initiative which members thought was helpful because they felt

that the group was driven by community members. In contrast with the WPHFI project, which was not seen as an agency-led initiative, members view the FR-CFLRP project to be driven by the US Forest Service, which provides its funding. In reference to the changing role of the Forest Service, one member observed, "I don't think the Forest Service saw itself as playing an important role in the Front Range Round Table during those [earlier] years." On the other hand, in discussing the FR-CFLRP project one member stated, "this is all the Forest Service's baby and it's their money, and their project [of] work...". The FRRT's focus on the FR-CFLR project may have also translated into changes in the structuring of working groups within the collaborative.

In the earlier years of the Roundtable, several working groups organized around the Roundtable's priorities and emergent issues, including groups focused on community protection, science and monitoring, and policy. The Science and Monitoring group is still active (although it was renamed as the Landscape Restoration Team) but Roundtable participants reported that other subgroups disbanded or saw less activity. "As sometimes these efforts go [activity] just waned and interest was not there," said one interviewee, discussing engagement around the Community Protection working group. With the onset of the FR-CFLRP project, some changes to organizational structure have occurred around the working groups. Initially, the Landscape Restoration Team's focus was to develop the monitoring plan for the FR-CFLR, but the team's responsibilities have since evolved and broadened. The LR team is responsible for the bulk of the workload associated with the FR-CFLR. This includes reporting, monitoring, data analysis, and development of implementation recommendations. On the other hand, the larger roundtable remains a place for broader discussion and identifying initiatives. While the LR Team has clear responsibilities, and generates tangible products related to the FR-CFLR, some interviewees felt that the larger Roundtable group has lost some of its initial focus and sense of direction. "When

we first started this, it was about community protection - that has been lost for the last five years," said one participant. Another participant elaborated on the 'lull' experienced by the FRRT over the last several years, stating, "Some people have felt that the CFLRP absorbed a lot of the Roundtable members time and energy during those years and I would agree with that." Interviewees also discussed how participation varies between the LR Team and the larger collaborative, with some members choosing to engage with the working group but not attending the FRRT's quarterly meetings.

2.4.2 Changes in Process

In addition to structural changes to the FRRT, there have also been changes to the processes of the group. While members still find some processes such as the adaptive management cycle need further clarity, many reported that the new facilitator has helped to add structure to the group's processes.

In 2015, the facilitation of the FRRT changed to Peak Facilitation led by Heather Bergman, which some members report has helped to 're-energize' the group. This change arrived at an important juncture for the collaborative. As discussed in the previous section, collaborative participants felt that the group as a whole lacked direction and focus outside of its responsibilities associated with the FR-CFLR project. The new facilitator has encouraged the FRRT to define goals, develop clear decision-making processes, and formalize some existing processes, such as the process for determining membership. In addition, Peak Facilitation has also encouraged the group to revisit its mission and objectives, which some members found to be timely. One member observed, "[Heather] really gets people engaged in what we're trying to do, does a really good job of figuring out...what our short and long term goals are, and holds people

accountable. It's been really helpful to have that." As a result of these changes, interviewees reported that some of the collaborative's processes are becoming more formalized. However as discussed previously in the 'Challenges' section, members of the Roundtable feel that the Roundtable needs to develop clear decision-making processes related to the FR-CFLRP. In particular, they want more clarity around the process used to provide recommendations to the Forest Service. The need for further clarity was summarized by one member, who stated, "I really do feel strongly that we should have a more formal process for the Forest Service to evaluate the monitoring data and show us if that's how they're modifying their prescriptions based on the monitoring data." Although collaborative participants generally reported satisfaction with the change in facilitation and increase in clarity around some aspects of the Roundtable's processes such as membership, there is still a clear need for additional clarity around the process used to provide recommendations to the Forest Service.

3. THE UNCOMPAHGRE PLATEAU COLLABORATIVE FOREST LANDSCAPE RESTORATION PROJECT

3.1 Accomplishments

Collaborative group participants identified four accomplishments associated with the UP-CFLRP: 1) strong, longstanding participation from members and community support, 2) learning through monitoring and research, 3) the ecological benefits of restoration, and 4) the leveraging of CFLRP dollars with external funding. These accomplishments are discussed in further detail below.

3.1.1 Strong, Longstanding Participation and Community Support

Interviewees discussed the strong participation of collaborative group members who have been involved in collaborative efforts on the Uncompaghre Plateau and overall support for the project from the local community. While there has been some turnover of membership, many collaborative group members have been involved in conservation activities in the area for a decade or longer prior to the UP-CFLRP and are committed to achieving restoration on the UP. One participant observed this longstanding and place-based commitment, stating "there's a lot of people involved who are really invested in the landscape...they're not going anywhere, so they're still involved." Another stated, "people have been sticking with this landscape for years. It is really important to have people who are sticking with the landscape." The commitment of collaborative participants over time were also echoed in the 2010 and 2013 case studies.

Collaborative participants expressed satisfaction with the variety of stakeholder interests represented in the project and with the opportunities for members to participate in the different stages of the project, from planning through monitoring and implementation. "There's quite a few partners that are...involved in the implementation because I see that as including the follow up research and monitoring," stated one interviewee. Although some interviewees said that in recent years, engagement with the UP-CFLRP project has waned, overall, members feel that their involvement in the project is sufficient.

Interviewees also noted the public's support for the UP-CFLRP and the lack of conflict surrounding the project as successes. One member stated, "On the UP, the success is that there is certainly widespread, near universal public support for the project. It's been beneficial. There's a lot of enthusiasm and excitement over restoration...." This accomplishment corresponds with a finding from the 2013 case study indicating that the UP-CFLRP helped to improve relationships

between the collaborative and external organizations due to outreach efforts associated with the project. Interviewees in 2016 also discussed how providing opportunities for stakeholders and the general public to participate in field trips and citizen science monitoring helped build support for the project.

3.1.2 Learning Through Science and Monitoring

Interviewees discussed how participation in ecological monitoring and research has led to opportunities for learning, and they also emphasized the importance of these opportunities. For example, participants felt that monitoring has helped to inform managers' understanding of fuel loads, spruce regeneration, and noxious weed management. One interviewee talked about how noxious weed monitoring has provided helpful information to resource managers, explaining, "What we've learned about risk assessments and monitoring for noxious weeds is really valuable. We're not finding that the areas that we've treated are becoming infested with noxious weeds."

Participation in the CFLR program has also provided opportunities to implement a more robust monitoring program. For example, the monitoring program now incorporates photo-points and controls. "Almost every treatment we do now has a control. That wouldn't have been happening prior [to participation in the CFLR program]," explained a Forest Service employee. Interviewees also talked about the value of the student monitoring program, which provided high school students the opportunity to collect data and learn about opportunities in careers related to natural resources.

In the 2010 case study, interviewees similarly identified the integration of science through monitoring as an accomplishment. Participants discussed how monitoring has provided learning opportunities and also helped them overcome conflict.

3.1.3 The Ecological Benefits of Restoration

Participants of the UP-CFLRP feel that their collaborative efforts have resulted in tangible outcomes on the landscape and improved management. Collaborative group participants discussed how the restoration activities associated with the UP-CFLRP have resulted in ecological benefits, including the creation of wildlife habitat, improved water quality, and a more fire-adapted, resilient forest. "I think the major [success] is a substantial portion of the landscape has been changed in ways that would not have happened if the collaboration hadn't worked as well and as smoothly as it did," stated one interviewee. Another UP-CFLRP participant discussed how the project's progress with trail and road maintenance work has surpassed expectations, which has resulted in "watershed benefits...that are huge."

Interviewees also discussed how the restoration work accomplished through the UP-CFLRP has helped build resiliency into the landscape and has led to changes in management, including the increased use of both prescribed and naturally ignited fires. "We feel like we can manage fire. If we have a natural start out there, we can manage fire [and] "let it burn" on at least fifty percent of the landscape because of all of the past treatments we have done. We are trying to get natural processes back into the ecosystem..." said one interviewee. However, many participants also expressed the need to further increase the use of fire, which is discussed in greater detail in the 'Challenges' section. Overall, the satisfaction expressed regarding outcomes on the ground correspond with findings from the 2013 case study, in which members reported confidence that the implementation goals of the UP-CFLRP were being met.

3.1.4 Leveraging Resources

Another accomplishment identified by interviewees was the leveraging of resources to accomplish project objectives using a variety of tools, including grants and matching funds. These external resources were used to build upon appropriated CFLRP funds and expand the capacity of the UP-CFLRP to accomplish restoration. As one member stated, "when you have money, you can get money" and this concept was employed in the UP-CFLRP with relative success. For example, Colorado Parks and Wildlife has provided significant funding for trail maintenance through its off-highway vehicle (OHV) grant. Interviewees also highlighted the UP-CFLRP's success in leveraging funds through the stewardship agreement with the Mule Deer Foundation, which provides 20% in matching funds.

Several participants of the UP-CFLRP felt that the seed money provided through the CFLRP was critical because it provided the momentum to access external funding. One interviewee explained, "Every year we bring in literally hundreds of thousands of dollars from outside partners because we have these monies to match their monies with and partners like CFLRP. You get that synergy going and all of a sudden you are doing more and more and more and more. That is because of that money." Although members saw the collaborative's success in leveraging funding as an accomplishment, they still expressed concern about future funding for restoration work post-CFLRP, as discussed in the 'Challenges' section.

3.2 Challenges

With any collaborative effort, challenges and disagreements are inevitable. Identifying and addressing challenges in a productive way is critical for moving forward. Members of the Roundtable described four challenges: 1) prescribed fire, 2) the industry and market-related

sustainability of the project, 3) the overall engagement of partners has waned, 4) the continued need for consistent funding.

3.2.1 Prescribed Fire

An important component of the UP-CFLRP's work plan is reintroducing fire to the landscape by treating up to 55,000 acres with prescribed burns. However, collaborative group participants acknowledged that this target has not been met and identified the need to increase the use of prescribed fire as an important area for improvement. One interviewee explained, "it's kind of like we've done the introductory phase of what we have in mind, but it's really getting that fire back on the landscape in a safe and productive way that is our goal and that has yet to be done."

Collaborative participants offered a number of reasons to explain why the use of prescribed fire has fallen short. Some discussed challenges within the Forest Service, including the agency's sensitivity to the public's concerns about burning, a lack of resources to implement the burns, and changes in staffing to personnel who are more cautious about burning compared to their predecessors. Others talked about how a lack of appropriate conditions for burning, or burn windows, has prevented the Forest Service from using prescribed fire. Several collaborative participants acknowledged that the public's acceptance of burning plays a major role in increasing the use of prescribed fire on the landscape. To this point, one participant stated, "For us to [use] fire in the summer, we need to develop more trust and comfort with fire...we have to work with those social concerns."

Most interviewees discussed how a combination of multiple factors posed significant hurdles to achieving the UP-CFLRP's prescribed fire objectives. For example, one Forest

Service representative discussed how the timing of burn windows and funding availability has failed to align, explaining, “Every year with our budget, we allocated burning money and we couldn’t use it, and we had to redistribute it. How can you keep your dollars flexible for those years when you have a window in the temperature?” The need to increase prescribed burning on the landscape was also discussed in the 2013 case study, and this issue remains a persistent challenge for the project that has not been met with significant progress.

3.2.2 Industry and Market Sustainability of the UP-CFLRP

The economic and social sustainability of restoration projects are critical components of the CFLR program. However, collaborative participants of the UP-CFLRP identified challenges facing local contactors including the economic viability of restoration byproducts and contracting requirements.

While some stands targeted for restoration work produce higher-value saw logs, a substantial portion of the work produces small-diameter logs and non-merchantable, low-value timber in order to meet fuel-load reduction objectives. This material often must be removed by contractors, which is costly. One interviewee pointed out that the stewardship contracts associated with this type of work are often less desirable for contactors than traditional timber sales, stating, “Most everything that we've done up on the plateau with our project has been with stewardship contracts. [Contactors] just don't like them because they don't want to do the service work.” Another interviewee highlighted this tension between the project’s ecological and socioeconomic objectives, stating, “Without the CFLRP money, we wouldn't be dealing with any of those fuel loading issues, and we may be working in stands with a little different composition and structure...where we could have more attractive timber offerings.”

3.2.3 The Overall Engagement of Partners Has Waned

Most collaborative participants agreed that the engagement of stakeholders around the UP-CFLRP has waned in recent years as the project has shifted in focus from planning to implementation, and as other collaborative resource management efforts have developed on the western slopes of Colorado.

Some interviewees attributed the reduced engagement of stakeholders to the high level of trust that has been built with the Forest Service and the lack of conflict surrounding the project, with one interviewee explaining, "Once you get past the controversial part or you get [to] the trust part, it goes on to automatic pilot." Another interviewee stated, "...the CFLRP really isn't very contentious at this point, the trust has been built and people kind of run where the fire is."

To this point, many interviewees agreed that the emergence of new, more contentious natural resource efforts in the area has to some extent, taken momentum away from the UP-CFLRP. The Spruce Beetle Epidemic and Aspen Decline Management Response (SBEADMR) project was specifically mentioned by multiple interviewees as a management effort that has taken the attention and energy of some UP-CFLP participants. Many collaborative participants are volunteers and as a result, have limited time and energy to invest in participating in these projects. While some interviewees saw the decrease in stakeholder engagement surrounding the UP-CFLRP as a weakness, others viewed it as part of the 'ebb and flow' of collaboration rather than a failure.

3.2.4 The Uncertainty of Future Funding

With the end of the current funding cycle approaching, a challenge identified by collaborative participants is locating resources to continue restoration work in pursuit of the UP-

CFLR project's objectives. Interviewees voiced concerns about funding UncCom, the nonprofit that acts as an administrator for the collaborative groups, with one participant explaining, "We need to develop new ways to raise money. We used to get more money from agencies, we get some from grants but that is very competitive."

Collaborative participants also discussed the need for funding to continue the monitoring efforts that began with CFLRP funds. A requirement of the CFLRP is that monitoring must continue for at least 15 years to assess the ecological, social, and economic impacts of the projects. This funding dilemma was discussed by one participant, who stated, "I don't want the program to end, because...I don't think we have the horsepower to do the scope of monitoring internally..."

The lack of consistent funding was also identified as a challenge in the 2010 case study. At the time, there was a newly signed EA for 8,000 acres of restoration work but insufficient funding for implementation. The timely arrival of the CFLR program created a funding opportunity for the restoration work to begin, but the 2013 case study also identifies funding-related challenges. The 2013 case study noted that the project received less funding than expected from the Forest Service Regional Office, which limited the ability of the GMUG to implement restoration work. It is clear that funding has been a persistent challenge over the last seven years for the collaborative restoration efforts on the Uncompahgre Plateau, and one that is likely to continue due to the temporary nature of funding opportunities and shrinking Forest Service budget.

3.3 Lessons Learned

In addition to accomplishments and challenges, members also identified several 'lessons learned'. These lessons include: 1) the importance of learning by getting out into the field, 2) the value of having a 501(c)3, 3) engaging with partners early and building trust.

3.3.1 The Importance of Learning in the Field

The 2010 UP Collaboration Case Study refers to the groups' emphasis on getting participants out into the field and learning from one another as a "key organizing principle", and this focus on field-based learning has remained over the years. The UP-CFLRP provides several learning opportunities for collaborative group participants and the general public that brings them out into the forest, including regularly scheduled field trips, and the local high school internship program, which focuses on ecological monitoring. Collaborative participants agreed that these opportunities to jointly engage in learning while out in the field were crucial and resulted in a number of benefits to the project.

Interviewees discussed how getting out into the forest to collect data or view the results of recent treatments during field trips built trust and transparency, kept them engaged, and helped them work through conflict. According to one participant, citizen science opportunities were especially helpful in building trust amongst participants because "...the citizen science allows the people to know the Forest Service has followed through." Several participants also noted that they preferred learning about the UP-CFLP in the field to more conventional meetings with presentations.

Participants highlighted the benefits of the high school internship program, which provided high school students the opportunity to work on a field crew over their summer break

and collect ecological monitoring data. Some interviewees saw the program as an opportunity to provide young people with skills and experiences that might lead them to a career in natural resources. To this point, one participant explained that "...engaging students allow us to look at the future, but also help[s] build new stewards of the land who know about the work we are doing out here." The internship program is viewed by several UP-CFLRP participants as an investment in the future.

3.3.2 A 501(c)3 is a Valuable Tool

Most participants of the UP-CFLRP agreed that a key 'lesson learned' is the value of having a 501(c)3 to organize the collaborative groups and help administer the project. Interviewees referred to UncCom as a "valuable tool" and "backbone organization" for its ability to fill in the gaps where the Forest Service did not have the capacity to address certain needs. Through UncCom, collaborative participants were able to hire facilitators, fundraise and participate in lobbying activities, which the Forest Service is explicitly not allowed to do as a government entity.

In addition to the value of the 501(c)3 itself, participants emphasized the importance of securing consistent funding to sustain the organization into the future. CFLRP funds cannot be used to directly fund the organization's activities and some interviewees proposed that future iterations of the program should either reduce match requirements or allow non-profit groups to use CFLRP funding. Participants also discussed the importance of planning ahead to sustain the organization beyond CFLRP. This lesson was highlighted by one interviewee who advised that other collaborative groups "...hav[e] a good plan. CFLRP is the tag line for today, but that might not be here in 5 years."

3.3.3 Engage with Partners Early

Engaging with partners early, prior to the development of the project's NEPA analyses, was cited by several collaborative participants as one of the UP-CFLRP's keys to success. According to interviewees, reaching out to partners and starting a dialogue early has several benefits; it allows partners to work through conflict early, helps build trust, it accelerates the NEPA process, and reduces the likelihood of litigation. Encouraging partners to come together and discuss restoration objectives early on meant that by the time the NEPA process began, any conflicts that may have slowed down that process had already been worked through. Furthermore, some interviewees suggested that their initial discussions and efforts, which resulted in the identification of restoration principles, fed into subsequent restoration projects. One interviewee pointed out, "you can spend your time collaborating or in litigation," and participants overwhelmingly agreed that the time spent collaborating was well worth the effort.

3.4 Changes in Process and Structure

A basic assumption underlying any collaborative effort is that participants will have a role in the decision-making process. However, the ability of stakeholders to participate in decision-making and the nature of that participation are shaped by the processes for involvement that the collaborative group has adopted, as well its organizational structure. As a result, examining the structure and processes that the groups associated with the UP-CFLRP have adopted helps us understand where decision-making authority lies and how readily stakeholders can access it. In the context of the CFLRP, studying how processes and organizational structure have changed over time can provide insight into whether participation in the program changes the nature of collaboration in collaborative groups. Since the CFLRP is a Forest Service program

that emphasizes restoration work on National Forest lands, some questions worth investigating include whether participation in the program changes the role of the Forest Service within collaborative groups and how collaborative groups' structures shift to support the project.

3.4.1 Changes in Structure

Participants interviewed in the 2013 case study discussed how the CFLRP influenced the structure of the collaborative groups by prompting the reorganization of the groups and establishment of the Western Colorado Landscape Collaborative (WCLC) as an umbrella organization. The WCLC was established in order to comply with programmatic requirements by creating a single organizational entity under which the multiple groups were administered. Prior to the reorganization, the Public Lands Partnership (PLP), UnCom, and the Uncompahgre Plateau Partnership (UP) functioned informally as a collaborative network; these groups were separate entities with different roles, but they worked collectively in addressing natural resource concerns on the Uncompahgre Plateau. As discussed in the 2013 case study, this restructuring contributed to communication challenges and some confusion surrounding the groups' roles and responsibilities related to the CFLRP.

This theme also emerged during the 2016 interviews, as participants discussed the implications of the restructuring and the continued lack of clarity around organizational structure. Some described the UP as the group with primary responsibility for the CFLR project, though they noted that PLP members also participated. Other interviewees described the UP-CFLRP as its own collaborative entity, consisting of participants from the PLP and the UP as well as other individuals who were not affiliated with either group. Several simply referred to the group as the WCLC. Overall, the interviewees presented similar but slightly different definitions

of the group of participants associated with the UP-CFLRP and most acknowledged the continued confusion surrounding the groups' structure. One interviewee noted, "I was amazed with how people within the partnership introduced themselves. People will still introduce our group as the UP, other people call it the Western Colorado Landscape Collaborative…we have an identity problem."

In addition to changes in organizational structure, the membership composition of the collaborative has also shifted. In the early years of the UP-CFLRP, environmental organizations such as the Western Colorado Congress and Colorado Wild were more involved in the project. In the 2013 case study, interviewees discussed how national and regional level environmental interests had become less involved. Participants in the 2016 interviews echoed this concern. One interviewee explained that the economic recession in 2008 impacted the ability of some environmental groups to stay afloat, stating "It was awful in Western Colorado...a lot of these really good environmental organizations, they couldn't afford to pay their staff anymore." Some participants also observed that while a few PLP members still attend meetings, the PLP's overall involvement in the UP-CFLRP has declined over the last several years. One interviewee speculated that the PLP's efforts have been focused on the SBEADMR project, leaving less time and energy for their involvement in the UP-CFLRP. In addition, interviewees during in 2013 and 2016 observed that agency participants played significant roles in the project, with some noting that it had become more agency-driven when it once was more stakeholder-driven.

3.4.2 Changes in Process

With the increasing complexity of the relationships amongst these groups and the establishment of the WCLC as an umbrella organization, the formalization of collaborative

processes might be expected. However, interviewees in 2016 and 2013 agreed that the group continues to follow mostly informal processes for discussion and decision-making. One interviewee discussed what he saw as a conscious effort by the group to avoid the formalization of processes, stating, "There's been a cultural evolution of collaboration out there, which is very boundary-less or resistant to any formalization of structure." This resistance to formalized process and structure appears to be rooted in the group's ethos of trust and open dialogue. One interviewee observed, "That [ethos] has translated over to the CFLR Project, which is very much still about learning about listening, about being listened to, rather than any formal recommendations to the Forest Service." This culture of trust, learning, and civil and open dialogue has been discussed across all of the case studies, and it appears to be a defining and persistent characteristic of the group's collaborative process.

While the 'table of trust' concept has persisted, the role of the collaborative group has changed over the lifetime of the UP-CFLRP. At the early stages, efforts were focused around identifying the group's restoration principles, locating resources for implementing the project, and developing the monitoring plan. These activities mobilized stakeholders and led to a series of field trips described in the 2010 case study as 'pivotal moments in the history of the collaborative'. For example, the data collection efforts from the forest forensics field trip contributed to a report on historic range of variability, which provided a foundation for the group's vision of ecological restoration.

As the UP-CFLRP moved into the implementation stage, the role of the collaborative shifted. In preparing for implementation, there were clear areas where collaborative input was needed. Describing the group's current role in the UP-CFLRP, one member stated, "When it comes to implementation, there's not a strong role for the collaborative except to check and see if

it's going the way that they thought it was going to be going." Some interviewees also discussed changes to the annual field trips, noting that they serve more as 'check-ins' to evaluate treatment areas and provide informal feedback to the Forest Service and have become less 'hands-on' compared to the field trips from prior years. Although the group's involvement in the UP-CFLRP has reduced with its implementation, interviewees broadly reported satisfaction with their role in the project.

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APPENDIX A

Interview Guide

Objectives:

1. *Build on the 2010 interviews (by Corrie Knapp and the 2012 interviews (by Kathie Mattor), which examined the history of the collaborative groups and focused on gauging the levels of transparency and inclusiveness of the CFLRP collaborative process, as indicated by membership characteristics, process and structure, communications, and implementation.*
2. *Investigate how participation in CFLRP has influenced the development (process, structure) of the collaborative groups and understand how the collaborative groups influence implementation of restoration treatments.*

Interview Questions

1) General/Introductory Questions

a) Please describe your involvement in __*(group's name)*

i) How long have you been involved?

ii) How have you been involved with __*(group's name)*? / *What has been the nature of your involvement?*

b) What do you see as the role of the collaborative in the implementation of the CFLRP project? What is the role of the WGs?

c) What have been the __*(group's name)'s* major accomplishments?

2) **Structure**

Group Membership

a) Has the involvement of stakeholder groups changed since the __*(group's name* was selected as a CFLRP project?

i) Are some stakeholder groups not represented/less active in the collaborative group?

ii) Do you feel that any stakeholder groups are over-represented/more active?

(1) Does this impact the group's ability to implement the work associated with the CFLRP project?

b) Are certain stakeholders more influential in the collaborative? Why is this the case?

i) Where does this influence come from?

ii) In what ways do they exert influence on the collaborative?

(1) Do certain stakeholders have more influence on decisions?

(2) Do certain stakeholders have more influence on the implementation of treatments?

Organizational Structure

c) Working groups/subteams

i) How does participation in WGs differ from the larger collaborative?

(1) Do certain members only participate in WG's or only in the quarterly meetings?

(2) Have new WGs formed since the group began participating in CFLRP? Have WGs disbanded since then or changed significantly? Why?

Process

3) **In what ways have the activities of __*(group's name)*__ changed since it was selected as a participant in the Collaborative Forest Landscape Restoration Program?**
   a) To what extent have the goals and focus of __*(group's name)*__ changed? Expand/give an example?
   b) What new issues or challenges have emerged since CFLRP selection? Expand/give an example
   c) What is your sense of the clarity of roles and responsibilities of members? Can you expand/give an example?
   d) Does the__*(group's name)*__ have a clear decision-making process? / What is the group's decision-making process?
      i) Has this changed since the group's participation in the CFLRP?
      ii) Do the WGs have a clear decision-making process?
   e) What types of decisions does the group make that it didn't before CFLRP?
      i) How did this change come about?
   f) How does the collaborative work through conflict/disagreements within the group?

Implementation

4) **How does __*(group's name)*__ influence the implementation of restoration treatments through the CFLR project?**
   a) What are the mechanisms for the group to provide feedback on the design of treatments?
      i) Does feedback given during field tours influence the design of treatments?
      ii) To what extent is monitoring data used as part of this feedback?
   b) Has __*(group's name)*__ influenced prioritization of treatments? How?
      i) Has the group provided input into decisions regarding the prioritization of locations, treatment types, size, or prescriptions?
   c) Is there broad agreement amongst the __*(group's name)*__ regarding a general vision, or specific goals for what the group is trying to accomplish on the ground through the treatments?
      (1) Are there any specific areas of disagreement regarding how treatments should be implemented?
      (2) How does the __*(group's name)*__ communicate their vision and goals for the treatments to the crews that implement them?
         (a) Is this effective? Is there evidence that the group's goals have been communicated to the crews?
   d) Are you satisfied with the level of influence and involvement that the __*(group's name)*__ has on the implementation of the CFLRP project?
5) Is __*(group's name)*__ meeting their implementation goals for CFLRP?
   a) (FS only) To what extent is treatment implementation under the CFLR project different than non-CFLRP?
6) **Any lessons learned you would like to share with future CFLR collaboratives? (major challenges, opportunities, etc.)**

APPENDIX B

Table 1: Transcript Codes and Associated Explanations	
Codes	**Explanation**
Accomplishments	Successes and achievements related to the collaborative group of interest, or the CFLR project.
Challenges	A difficulty or barrier related to the collaborative group of interest, or the CFLR project.
Lessons Learned	Words of wisdom and advice meant to be shared with other collaborative entities based on the experiences of the interviewee.
Collaborative Process	The rules adopted by collaborative groups to help them make decisions and govern themselves. This includes the level of formality or informality of these rules and procedures, facilitation, and the focus of the collaborative group.
Collaborative Structure	Membership composition, arrangement of working groups, leadership roles, and organizational arrangement of a collaborative group.
Description of Implementation	How the implementation process is characterized by an interviewee, including discussion of their role and the roles of others in implementation.
Implementation Challenge	A difficulty or barrier specific to the implementation of a CFLR project, including barriers to a stakeholder's ability to participate in implementation.
Top down factor	Statutory guidance, policies, organizational culture, and other institutional factors that originate from the upper levels of the Forest Service which impact stakeholder participation in implementation.
Bottom up factor	Descriptions of individuals and their motives, the roles of local implementers and social norms that impact stakeholder participation in implementation.
Biophysical factor	Ecological factors, including site-specific conditions of treatment areas, impact stakeholder participation in implementation.
Industry related factor	Factors related to the local industry, including contractors and market conditions, which impact stakeholder participation in implementation.
Collaborative factor	The characteristics and governance of collaborative groups, including trust and capacity, which impact stakeholder participation in implementation.
Satisfaction	The degree to which a participant's expectations regarding their involvement in implementation have been met.

APPENDIX C

Table 2: Interviewee Stakeholder Groups	
Uncompahgre Plateau Interviewees	
Stakeholder Group	**Number of Interviewees**
U.S. Forest Service	3
Private Industry	1
State or local government entity	0
Other Federal Agency	0
Environmental Organization	4
Research Institution	2
Total	**10**
Front Range Interviewees	
Stakeholder Group	**Number of Interviewees**
U.S. Forest Service	3
Private Industry	1
State or local government entity	5
Other Federal Agency	2
Environmental Organization	4
Research Institution	2
Total	**17**